

A summary of QUALICheck factsheets

The QUALICheck project works towards improved compliance and quality of the works for better energy performance of buildings. One of the output formats of the project are so-called factsheets: brief documents which comprehensively present a specific situation, framework or practice, relevant to the aspects of quality and compliance examined by QUALICheck, namely: “Status on the Ground”, “Compliant and Easily Accessible EPC Input Data”, “Quality of the Works”, and “Compliance and Effective Penalties”. The aim is to highlight and document interesting approaches, which could be adapted and applied further and elsewhere.

Keywords: QUALICheck, Status on the Ground, Compliant and Easily Accessible EPC Input Data, Quality of the Works, Compliance and Effective Penalties

This article summarises the information presented in the factsheets made available by QUALICheck until June 2016. Additional factsheets have been published since, focusing mostly on the present “Status on the Ground” in the focus countries examined by the project.

Status on the Ground

Lågan Programme for Buildings with Low Energy Use (FACT SHEET #10): The Lågan programme (financed by the Swedish Energy Agency) reports about low energy buildings in Sweden; in addition, by providing grants for demonstration projects and regional/local cooperation initiatives, Lågan aims to increase the number of low energy buildings. So far the conclusions of the Lågan programme are that there is a slow but increasing market development. The average building cost for low energy buildings is approximately 7% higher than for buildings meeting the general energy performance requirements (BBR 16, 18 and 20).

Sveby Standardise and Verify the Energy Performance in Buildings (FACT SHEET #11): To get a building permit for a new building or for changing an existing building in Sweden, an energy use calculation has to be handed in to the municipality. In general, the calculated energy use for heating, cooling, operation of HVAC systems and domestic hot water should be equal to or lower than a defined maximum value. The calculation

and verification of the energy performance in buildings in Sweden are not standardised processes. Sveby (“standardise and verify the energy performance in buildings”) is a scheme which aims to clarify and ensure the quality of the entire building process from early stage design requirements to verified results. Sveby is a voluntary national scheme involving major actors in the Swedish building sector aiming for increased compliance with the Energy Performance of Buildings Directive (EPBD).

Compliant and Easily Accessible EPC (Energy Performance Certificate) Input Data

French voluntary scheme for harmonised publication of ventilation product data (FACT SHEET #03): This scheme has been launched in 2012 by Uniclimate, the French association of ventilation product manufacturers. It ensures that product characteristics are provided under a harmonised form (same physical quantity, unit and assessment method), and facilitates access to relevant input data for the energy performance calculation of a building. The scheme also contributes to enhancing the compliance of published data.

European voluntary rating programme of cool roofing products (FACT SHEET #04): Cool roofing products are products applied to the roof of a building in order to keep roof surfaces cooler under the sun and thus minimise solar heat gain through the roof,

especially in the hot season. These products both reflect solar radiation (high solar reflectance) and release absorbed heat (high infrared emittance). In order to provide easy access to relevant and compliant input data for the calculation of a building's energy performance, the European Cool Roofs Council (ECRC), has developed a voluntary product rating programme for such products. Any product may be rated regardless of the reflectance and emittance values, as long as it is tested in accordance with ECRC's programme requirements.

Voluntary scheme and database for compliant and easily accessible EPC product input data in Belgium (FACT SHEET #05): The "EPB product database" is an effective scheme to improve the compliance and easy access to product characteristics used as input data for the EPC calculation. The scheme has been accepted by the market since many years. Compliance of product data is improved by third-party controls, and the recognised product data is published on a specific web page, making it easily accessible. This Belgian scheme was first developed in the context of EPC for new buildings, residential and commercial; nevertheless, the scheme is also used in the context of EPC for existing buildings.

Quality of the Building Works

Building regulations can foster quality management — the French example on building airtightness (FACT SHEET #01): A quality management scheme has been introduced in the French energy regulation to encourage professionals to question their current practice and find effective solutions to improve building airtightness. The scheme allows successful applicants (mostly builders of single-family dwellings) to justify a given airtightness level without systematic third-party testing. Instead, they should set up a quality management (QM) approach for the whole building process, and this approach has to be approved by a national committee. At the end of 2014, 81 such QM approaches have been approved representing a production of about 15.500 buildings per year.

The German contractor's declaration: supporting compliance with minimum energy performance requirements (FACT SHEET #02): This new obligatory scheme introduced in Germany requires contractors to confirm in writing that specific minimum energy performance requirements are met during the realisation of a renovation measure. The requirements cover building envelope components, space heating and hot water generation and distribution systems, and newly installed cooling and ventilation systems. Infringements lead to fines.

Quality control of Stuttgart's retrofit standard realised by the city's energy consultancy office (FACT SHEET #08): The City of Stuttgart's Retrofit Standard comprises various steps to achieve the energy-efficient retrofit of both residential and non-residential buildings. This includes the construction supervision, for which the City's Energy Consultancy Office (EBZ) provides qualified experts. In this process, the interfaces between the different trades/works in particular are checked and documented. Moreover, EBZ-trained craftsmen are introduced who are able to install state-of-the-art energy saving measures, in accordance with the respective manufacturers' instructions. This ensures high quality of implementation and durable buildings.

AMA – General material and workmanship specifications (FACT SHEET #09): AMA is a reference framework describing requirements on materials, work and results related to all types of building projects. It is made available for the following areas: site work, building construction, heating, sanitation and ventilation, cooling technology and electricity. AMA also includes administrative rules and recommendations. The scheme has been used in Sweden for more than sixty years. Between 90 and 95% of all building projects in Sweden refer to AMA in the contract documents.

Compliance and Effective Penalties

Regulatory compliance checks of residential ventilation systems in France (FACT SHEET #06): In the French context, regulatory compliance checks on samples of the yearly production of new buildings have been introduced since the early 1970s, to urge contractors and project owners to build according to the rules set by the building code, and to monitor the application of the regulations. These checks cover the compliance to the ventilation regulation. The analysis of results of checks to residential ventilation systems shows a significant rate of non-compliance, i.e. of the order of 50%.

Building airtightness in France — regulatory context, control procedures, results (FACT SHEET #07): The French energy regulations have included since 2006 a significant reward for good airtightness, combined with a minimum requirement for residential buildings in the 2012 version of the regulation. Airtightness test results show that the average building airtightness performance has improved by nearly 50% in single- and multi-family buildings since 2006 and now stabilises below the minimum requirements. ■